

Date: Mon, 7 Feb 94 04:30:27 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #22
To: Ham-Homebrew

Ham-Homebrew Digest Mon, 7 Feb 94 Volume 94 : Issue 22

Today's Topics:

 Antenna pre-amp design. Help!
 FFTMorse help please
 Mail-order toroids, RF transistors, Help!
 Project #15: A Spark-Gap Transmitter
 Securing VXO coils, what glue?
 The World's Smallest Receiver
 Tx/Rx antenna switching, QSK circuit. Help!
 UNSUBSCRIBE

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 2 Feb 94 01:29:59 GMT
From: olivea!korie!sh.wide!wnoc-kyo-news!aist-nara!ccsparc01!icspub!ce-gw!ee!
kitagawa@uunet.uu.net
Subject: Antenna pre-amp design. Help!
To: ham-homebrew@ucsd.edu

asirene@ntuvax.ntu.ac.sg writes:
9V Daniel>> Can anyone here give me some advice on building an antenna
9V Daniel>> pre-amp for working 4 - 24 mHz? Should I go broadband or
9V Daniel>> switched bands? What about pre-filtering?

Please use MHz if you mean 1,000,000 Hz. mHz is 0.001 Hz.

gary@ke4zv.atl.ga.us (Gary Coffman) writes:
KE4V> Normally, a preamp is unnecessary for the HF spectrum.

KE4V> The usual problem is inadequate rejection of strong signals.

True, unless the antenna is too small.

KE4V> You definitely want to use a selective
KE4V> amplifier with good sharp tuned circuits.

I prefer passive pre-filter + wideband amplifier to tuned amplifier.
Wideband (say 2-30MHz) amplifier with moderate NF (~3dB), gain
(~10dB), and 3rd-order IP can be easily built using a pair of J-FETs
in parallel in grounded gate configuration. You can use 2SK125 or
J310. Many (most?) of Japanese HF transceivers employ similar circuit.
Akizuki [in Akihabara Tokyo Japan] sells 2SK125 (You can specify class
"5" for max Idss) at about 2 \$US per 5 pieces.

Once you built wideband amplifier, you can play around pre-filters as
you like and study. It can be a bunch of bandpass filters as in the
case of manufactured transceivers. Or it can be a tuned circuit with
variable C's and L's. Or it may not be necessary if your antenna is
really small.

KE4V> A power VMOS FET like the VMP-4 may be a better
KE4V> choice. Run about 100 ma of standing current.

Yes. But when I asked Ed Oxner about his nice VMP's a year ago, he
said that Siliconix had sold their factory lines for VMP-1 and 4 and
were no longer manufacturing them. Are they still available? Then I
would like to know where I can get them.

Meanwhile I purchased some T-MOS FETs from Motorola but so far haven't
had time to experiment wideband NFB preamplifiers using them.

Siliconix had discontinued VMP-1, VMP-4, U350 (U310 quad for DBM), and
Si8901 (DMOS quad for DBM). Why? I can't understand. Maybe they had
come too early and gone too early.

masa

*--- ***** *---* *-* *-* QRZ? de JH3PRR
Masahiro Kitagawa <kitagawa@ee.es.osaka-u.ac.jp>

Date: Thu, 3 Feb 1994 02:20:49 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!elroy.jpl.nasa.gov!swrinde!
cs.utexas.edu!utnut!nott!cunews!freenet.carleton.ca!FreeNet.Carleton.CA!
aa360@network.ucsd.edu
Subject: FFTMorse help please
To: ham-homebrew@ucsd.edu

I've got the enhanced version of FFTMorse put out by Rocco Caputo and for the life of me, I can't get it to work with my SBPro CT1330Rev 2 card. The program refuses to recognize my card despite the fact that I've updated the CT-Voice.drv to 2.1 and changed interrupts/reinstalled from scratch/ etc. The card works well otherwise; just can't get Morse.exe to recognize it. It reports a card type -1 which Rocco says means that it does not recognize my card as a valid type, so my BLASTER var (a220 i5 d1 t2) is of course deemed to be wrong, and the program terminates.

Anyone have a similar problem, and played with the morse.exe C source code to fix this annoying fatal error??!!
Or will I be forced to go to HamBlaster.....

--

Date: Thu, 3 Feb 1994 22:27:06 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!
vixen.cso.uiuc.edu!uwm.edu!msuinfo!harbinger.cc.monash.edu.au!
bruce.cs.monash.edu.au!trlluna!titan!pcies4.trl@nntp.ucsb.edu
Subject: Mail-order toroids, RF transistors, Help!
To: ham-homebrew@ucsd.edu

In article <1994Feb1.020408.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:

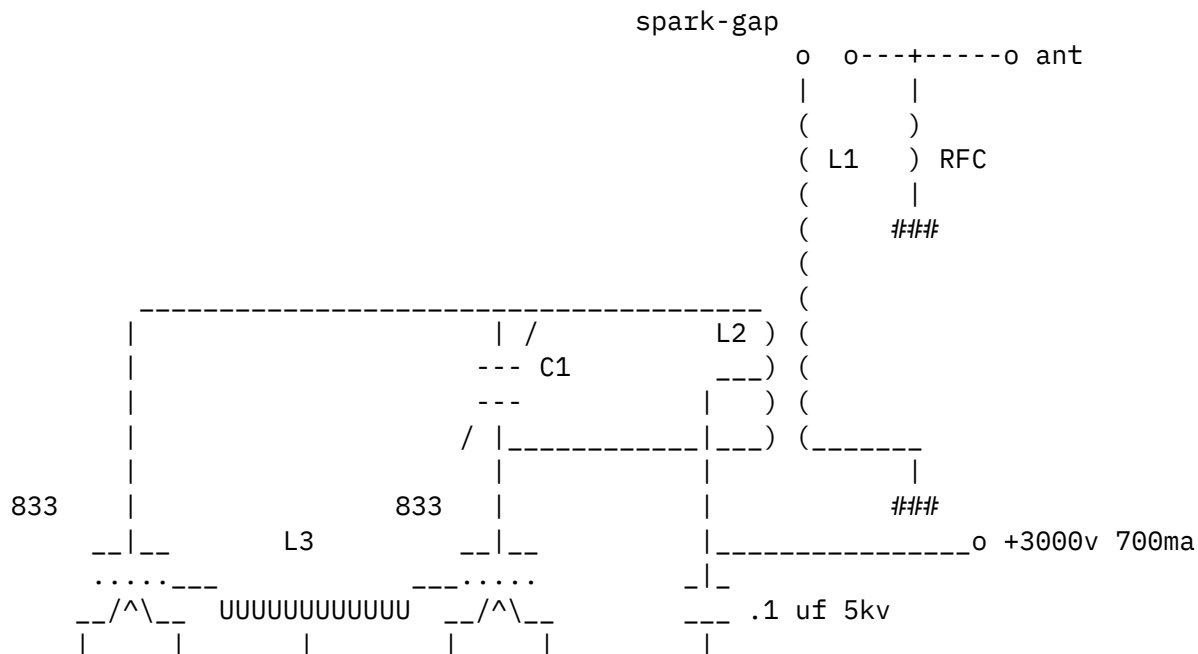
>From: asirene@ntuvax.ntu.ac.sg
>Subject: Mail-order toroids, RF transistors, Help!
>Date: Mon, 31 Jan 1994 18:04:08 GMT
>Hi,
>
> Can some kind hearted HAM help me order some parts from Amidon
>Associates Inc. I do not have the catalog so I do not know how much to
>send, how much for shipping, minimum order. This is for sending to
>Singapore where toroids are non-existent. I am also in need of MRF472 or
>MRF476. The toroids I am interested in are:-

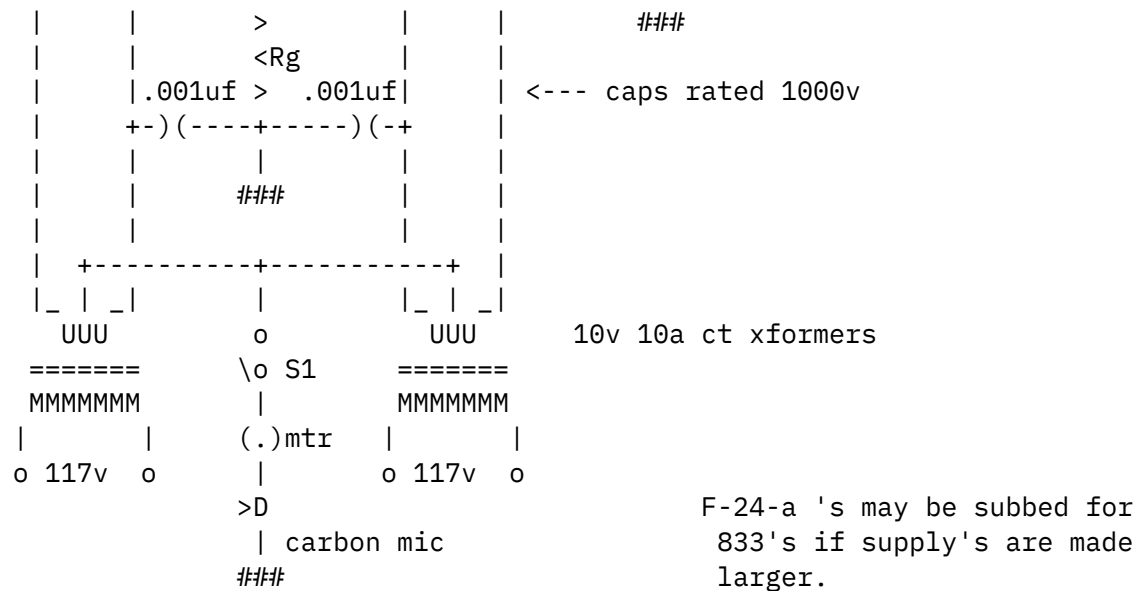
>
> 4 x FT37-43 core
> 2 x FT50-43 core
> 2 x FB73-801 ferrite bead
>73 de 9V Daniel 4 x T-50-6 core
> 2 x T-37-6 core
>

> Would appreciate any help for ordering these stuffs. Need them
>fast. I need 2 MRF-472 (or MRF-476 if 472's are not available) and also
>a 14 mHz fundamental crystal. What is the fastest way I can get hold of
>these? Tks.

>

>





How it works:

The 2 tubes form a push pull power oscillator which makes alternating current, but at a radio frequency.

This is done by use of L1 , L3, and the 2 little tubes.

In this case, the actual frequency is not important, since the objective is to generate maximum bandwidth...the goal of any 'phone station. C1 is used to obtain maximum power by resonating L1 to L2's natural freq.

This RF voltage is stepped up by a factor of 30 to 100X by L2 and sent on to the spark-gap, where the actual RF-to-be-sent is generated.

The RFC keeps the ant ckt at DC ground, yet will not short out the RF...which is sent from the sparkgap, to the ant.

The ant wants to be one wire, and end fed. No coax required..just hook 'er up and duck.

The length of the antenna determines the sending band it will be on. The formula to use to get that length is...

$$\text{Feet} = 468 / (((F * F) + 730) - (F * F))$$

F = frequency in Mhz (rounded off to nearest 100 Khz)

Voice modulation is done by use of a special Carbon Microphone, as used in the 1920's...which can handle several amps.

Here, rather than sending RF thru the mic as was done back then, only DC

is sent thru.

That way, the operator (or inflictor) won't get an RF burn on his lips if he speaks too close to the mic.

That modulates the power to the tubes , which varies the intensity of the spark which then puts quite suitable a signal on the air.

The itellegibility will match the content of some of the QS0's now on the air.

To operate:

- 1 Place mouth near carbon microphone.
- 2 Close S1 and adjust C1 for dip in current (mtr) quickly.
- 3 Make oinking and Mooing noises to indicate your presence to everyone.
- 4 Open S1 when you get around to it.

Again, credit (or blame) goes to Randy KA1UWN.

Jeff NH6IL

Date: Thu, 3 Feb 1994 18:14:01 GMT
From: nntp.ucsb.edu!mustang.mst6.lanl.gov!nntp-server.caltech.edu!
elroy.jpl.nasa.gov!usc!howland.reston.ans.net!newsserver.jvnc.net!
raffles.technet.sg!ntuix!ntuvax.ntu.ac.sg!asirene@network.UCSD
Subject: Securing VX0 coils, what glue?
To: ham-homebrew@ucsd.edu

Hi,

I am winding some coils for a VX0 and want to know if the "glue-gun" melted plastic is suitable for securing the coil or if it is too lossy?

73 de 9V Daniel

Date: Mon, 31 Jan 1994 20:53:59 GMT
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa
Subject: The World's Smallest Receiver
To: ham-homebrew@ucsd.edu

In article <1994Jan30.165404.3107@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

```

.....<neat rcvr deleted>
>
>Wind the coil on a toilet paper tube or a Quaker Oats box. The variable
>tap is the "tuning" adjustment. Volume is controlled by how deeply you
>stick the earphone in your ear. While this receiver is optimized for
>AM voice, it'll work for Morse too if the matching transmitter is spark.
>
>Gary
>--

```

Gary has mentioned the magic word! Here comes Project #15 (next article).

Jeff NH6IL

```

-----
Date: 4 Feb 94 16:52:58 GMT
From: auratek!epacyna@uunet.uu.net
Subject: Tx/Rx antenna switching, QSK circuit. Help!
To: ham-homebrew@ucsd.edu

```

In article <1994Feb4.133949.1@ntuvax.ntu.ac.sg>, asirene@ntuvax.ntu.ac.sg writes:

```

> Does anyone have a circuit for TX/RX antenna switching which does not
> use relays. Diodes are good but how do I use them. This for 20 meters mainly
> but also for broadband RX. Will the below work for 6 watts TX output, will it
> fry my frontend?
>
>

```

```

> Tx Out 6 watts 20 meters >-----o-----> 50 ohm antenna
>                                     |
>                               === 51 pf
>                               |
>                               o-----> Rx input
>                               |
>                               o-----o
>                               |       |
>                               ---   ---
>                               ^     \ / Both diodes are IN914 types
>                               / \     v
>                               ---   ---
>                               |       |
>                               Ground >-----o-----o-----> Rx Ground and Coax shield
>
> Will the circuit work? How will the 51 pF affect the final Tx filter?
> Since the 51 pF should in theory go in parallel to the last output capacitor?

```

Yes type limiting type of circuit will work. In TX, the 51 pF capacitor
